Identification Tables for the Introduced Hawaiian Nitidulidae (Coleoptera)

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The Nitidulidae of Hawaii are a well-developed group containing more than 140 species. Most of these species are endemic products and are found almost exclusively in the mountain forests. Considerable difficulty is encountered when anyone desires to identify specimens that come to hand. The present status of the literature on the endemic species renders it almost impossible to identify any but the most aberrant forms. Although there are but few species that are met with by the agriculturist or entomologist in the lowlands, much confusion has occurred in the identification of the species. The purpose of this paper is to present some keys which, it is hoped, will enable one to identify the species that are usually found about crops, vegetable produce, and stored products in the lowlands.

Although one of the species included in this paper has not yet been recorded from elsewhere, there is reason to believe that all of the species are adventitious and that none of them are really components of the endemic fauna. Most of them are widely distributed, and four may be considered to be almost or quite cosmopolitan. The only exception to their all being introduced is *Haptoncus mundus* Sharp, but I believe that that species is either a synonym of some other species or that it will eventually be found in some other region. I have, therefore, called all of the species discussed in this paper "introduced."

There is no conclusive information available to show that any of these species causes primary damage to growing crops in Hawaii. On the other hand, fermenting, overripe, or injured friuts are attacked, and certain stored seeds, cereals, and dried fruits are occasionally damaged. At least two of the species of *Carpophilus* are of some importance about pineapple canneries because they occasionally drop into the fruit in the canning process. Students should refer to Dr. Schmidt's excellent biological studies of the species found in Hawaiian pineapple fields (Ann. Ent. Soc. Amer., vol. 28, no. 4, pp. 475–511, 1935).

KEY TO THE SUBFAMILIES

Abdomen with two or three dorsal segments broadly exposed behind the elytra ..... **Carpophilinae**

Abdomen with only one (exclusive of the pygidium which often gives the appearance of a small terminal segment), or no dorsal segments exposed

behind the elytra which almost entirely or quite conceal the abdomen from above ..... **Nitidulinae**

CARPOPHILINAE

Genus **Carpophilus** Stephens

KEY TO THE SPECIES

In preparing this key, an eyepiece micrometer was used for measurements, and it is assumed that such an instrument will be used by the reader when identifying specimens.

1. Posterior third or half of each elytron with a large, conspicuous, yellowish macula outstanding to the unaided eyes. **C. hemipterus** Linné

   Posterior parts of the elytra dark, or at least never with pale maculae 2

2(1). Elytra with a small, but usually conspicuous yellowish subhumeral spot, otherwise rather uniformly dark; dorsal pubescence usually sparse and inconspicuous; distance across the eyes only about two thirds as broad as the broadest part of the pronotum. **C. humeralis** (Fabricius)

   Elytra with a variable amount of yellowish coloration, but usually without distinct, isolated subhumeral spots; pubescence conspicuous and comparatively dense; distance across the eyes more than two thirds to about three fourths as broad as the broadest part of the pronotum 3

3(2). Elytra along the median line almost or fully as long as the head and prothorax; prothoracic punctures well separated by interstices at least as broad as the punctures ..... **C. maculatus** Murray

   Elytra usually distinctly shorter than the head and prothorax along the median line; prothoracic punctures dense, the interstices usually narrower than the diameters of the punctures; the surface of the pronotum often appearing minutely roughened because of the denser puncturation ..... **C. dimidiatus** (Fabricius)

At least three of the species of *Carpophilus* are pests in food products in addition to breeding in fermenting vegetation. *Carpophilus hemipterus* (Linné) is called the "Dried Fruit Beetle" and infests a variety of dried fruits in stores, warehouses, and homes. *C. dimidiatus* (Fabricius) has occasionally been found in walnuts, cornmeal, macaroni, and popcorn in Hawaii, and *C. maculatus* Murray has similar habits and has been found in walnuts and macadamia nuts in Hawaii but is evidently much less common than *C. dimidiatus, C. humeralis* (Fabricius), our most bulky and shiny species, evidently confines its attacks to fermenting vegetable matter and is usually extremely abundant.

NITIDULINAE

KEY TO THE GENERA

Intercoxal process of the prosternum obviously narrower at its narrowest part than the apex of a fore tibia, only one half or two thirds as broad; dorsum clear yellow or each elytron with three isolated black patches; not over 2 mm. long ..... **Haptoncus**

The narrowest part of the intercoxal process of the prosternum fully as broad or broader than the apex of a fore tibia; dorsum dark, strongly infumated; over 3 mm. long ..... **Omosita**

Genus **Haptoncus** Murray

KEY TO THE SPECIES

Elytra maculate, with a small basal spot, a large median transverse macula, and the apices black; scutellum dark ..... **H. ocularis** (Fairmaire)
Elytra yellow throughout and without black spots; scutellum not dark. **H. mundus** Sharp

Haptoncus ocularis (Fairmaire) (*H. tetragonus* in our literature) is rather common in various fermenting fruits, but *H. mundus* Sharp is evidently uncommon, and few specimens are in local collections.

Genus **Omosita** Erichson

Omosita discoidea (Fabricius).

This species is known in Hawaii by a single specimen in the collection of the Hawaiian Sugar Planters' Association collected by Timberlake from a greasy can on Haleakala, Maui, in 1919. We do not know whether this species is or is not established.